

REMARKS

A Response under 37 C.F.R. § 1.116 was filed on June 29, 2005, along with a Rule 132 Declaration by inventor Mr. Yoshikawa. In the Advisory Action dated July 15, 2005, at block 8, the Examiner indicates that “[t]he affidavit or other evidence ...will not be entered...”. A Notice of Appeal was filed on August 1, 2005.

The present Request for Continued Examination requests reconsideration of the Response under 37 C.F.R. § 1.116 filed on June 29, 2005, along with entry of Mr. Yoshikawa’s Rule 132 Declaration, and entry of the present Amendment under 37 C.F.R. § 1.114(c).

In the present Amendment, Claim 6 has been rewritten to be in independent form. Claims 7-9 have been added. Claims 7-9 correspond to Claims 2-4, respectively and depend from Claim 6. Claims 1-4 have been canceled. Claim 5 was previously canceled.

No new matter has been added and entry of the Amendment is respectfully requested. Upon entry of the Amendment, Claims 6-9 will be pending in the application.

Claims 1-4 directed to a rubber-based composite material are canceled without prejudice or disclaimer to the filing of a continuation application.

Claim 6 directed to a tire is amended to be rewritten in independent form.

New Claims 7-9 depending upon Claim 6 find support, for example, in Claims 2-4, now canceled. No new matter is added.

Entry of the Amendment is respectfully requested along with reconsideration and review of the claims on the merits.

Claims 1-4 and 6 have been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Yoshikawa et al (U.S. Pat. No. 4,872,932) in view of JP 10-053010.

In the Advisory Action dated July 15, 2005, the Examiner indicates that the request for reconsideration has been considered but does not place the application in condition for allowance because “the Examiner is not bodily incorporating the structure of the JP ‘010 in the structure of Yoshikawa et al. as implied by Applicant in arguments and the filed Declaration under 37 C.F.R. 1.132. It is noted that the primary reference of Yoshikawa et al. provides the claimed structure except that it fails to explicitly indicate that the substrate is a nonwoven [*sic* - substrate]; the Examiner relies on the teaching of the JP ‘010 reference to show that the use of a nonwoven substrate would have been obvious to one of ordinary skill in the art of rubber based reinforcing composites.” (see Advisory Action, continuation page).

Applicants respond as follows.

Claims 1-4 are canceled making the rejection of these claims moot.

Claim 6 (as well as dependent Claims 7-9) is directed to a tire.

Applicants respectfully submit that a skilled artisan would not have been motivated to combine Yoshikawa with JP ‘010 in the first place. Furthermore, Applicants submit that the Rule 132 Declaration by inventor Mr. Yoshikawa supports unexpectedly superior results in the present invention. Thus, Claim 6 directed to a tire and rewritten into independent form is not rendered obvious over the cited references to Yoshikawa et al. and JP ‘010.

Present independent Claim 6 is directed to a tire wherein a reinforcing layer comprising a rubber-based composite material is between a carcass layer and a sidewall, said rubber-based composite material comprising a non-woven fabric; a coating of a metal or metallic compound reactable with sulfur, the coating being formed on the surface of filaments constituting the non-woven fabric by a physical vapor deposition (PVD) method or a chemical vapor deposition

(CVD) method; and a rubber that adheres to the coating forming a continuous layer and covering the non-woven fabric. A tire of the present invention having the application of this rubber-based composite material to a sidewall portion of the tire enhances the rigidity of the sidewall portion and also improves the driving stability of the tire.

The primary reference Yoshikawa et al discloses a rubbery composite material comprising a substrate coated with a thin film of zinc, copper, cobalt or an alloy thereof by dry plating, and a rubber composition bonded thereto. However, as the Examiner concedes, Yoshikawa et al does not disclose or suggest the use of a nonwoven fabric substrate. Furthermore, Yoshikawa et al fails to provide any examples of any tires comprising its rubbery composite material. Yoshikawa et al also fails to provide any tire structures such as arrangements of a rubber-based composite material. Yoshikawa et al also fails to provide any disclosure related to tire performance attributes such as driving stability, vibration riding comfort and practical durability. Thus, Yoshikawa et al would not motivate one skilled in the art to look to a specific reference such as JP '010 in order to integrate a non-woven fabric substrate in Yoshikawa's method for preparing its general rubber composite materials, or applying its rubber composite materials to tires, much less to applying its rubber composite materials specifically to a reinforcing layer of a tire comprising a rubber-based composite material in a reinforcing layer between a carcass layer and a sidewall.

Applicants also disagree with the Examiner's assertion that Yoshikawa provides the claimed structure of amended Claim 6 as Yoshikawa fails to disclose not only nonwoven fabric substrates, but also reinforcing layers of tires.

The secondary reference JP ‘010 discloses use of a non-woven fabric as reinforcement for a tire in order to enhance both vibration riding comfort and driving stability. However, as JP ‘010 further discloses that the adhesiveness between the filament fiber of the non-woven fabric and a rubber can be improved by conducting dip and heat set treatments, JP ‘010 actually teaches away from increasing adhesiveness by other methods and would thus not motivate one skilled in the art to look to Yoshikawa’s method for preparing rubbery composite materials by integrating a metal such as zinc, copper, cobalt, and an alloy thereof into a rubber composition, especially since Yoshikawa fails to provide any examples of its rubber composition increasing adhesiveness in tires.

Thus, the combination of Yoshikawa with JP ‘010 is not motivated by a skilled artisan based on at least Yoshikawa’s failure to specifically address a tire and reinforcing layer as presently claimed.

Assuming *arguendo* that Yoshikawa is properly combinable with JP ‘010, which Applicants strongly disagree with, JP ‘010 clearly teaches that if the adhesiveness between the filament fiber of the non-woven fabric and a rubber is insufficient, dip and heat set treatments can be conducted in order to enhance the adhesiveness. Thus, the closest prior art example would include JP ‘010’s tire using a non-woven fabric after a conventional dip treatment, as Yoshikawa et al fails to give an example of a tire integrating its rubbery composite materials.

Applicants previously submitted a Declaration executed by Masato Yoshikawa to demonstrate the unexpected superiority of the present invention and thus further support the patentability of the present invention. Entry of the Declaration is respectfully requested for the

reasons given in the Response filed on June 29, 2005, summarized herein below, and based on the remarks provided above.

In the Declaration, a non-woven fabric was treated with a conventional dip treatment instead of cleaning and coating with cobalt. A radial tire was prepared in the same manner as described in the examples in the specification of the present application except for using the above-treated non-woven fabric. The obtained tire is designated as Comparative Example I.

Comparative Example I was evaluated in terms of driving stability and practical durability in the same manner as described in the examples in the specification of the present application. In addition, Comparative Example I and the tires described in the examples (Examples and Comparative Examples) of the specification of the present application were evaluated in terms of vibration-riding comfort. The results together with those contained in Table 2, at page 13 of the specification of the present application are summarized in Applicants' previous Response, and indicate that Comparative Example I provided driving stability of 113, vibration riding of 119 and practical durability of 183. In contrast, Examples 1-6 provided driving stability of 113 to 119, vibration riding of 129-137 and practical durability of 180-193. Thus, it is clear that the present invention is superior to Comparative Example I at least in terms of vibration riding comfort.

Mr. Yoshikawa concluded that the present invention provides unexpected superior results by applying a non-woven fabric coated with a metallic compound reactable with sulfur by a PVD or CVD method compared to a tire using a conventionally dip-treated non-woven fabric.

Neither Yoshikawa et al nor JP '010 disclose or suggest the above features of the presently claimed invention. Accordingly, Applicants respectfully submit that the comparative

AMENDMENT UNDER 37 C.F.R. § 1.114(c)
U.S. Application No.: 09/960,345

Attorney Docket Q65935

data in the Declaration rebuts any *prima facie* case of obviousness over Yoshikawa et al in view of JP '010 and that the rejection should be withdrawn.

Accordingly, Applicants respectfully submit that the present invention is not obvious over the cited references and the rejection should be withdrawn.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Fang Liu
Registration No. 51,283

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: October 3, 2005